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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,081	03/01/2002	Takayuki Yamamoto	220119US0	9114

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EXAMINER

UHLIR, NIKOLAS J

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 08/08/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,081

Applicant(s)

YAMAMOTO ET AL.

Examiner

Nikolas J. Uhler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

1. This office action is in response to the amendment/arguments dated 7/14/03. Currently, claims 1-4, 6, and 8-11 are pending. The applicant's submission has been carefully considered but is not considered to be persuasive in overcoming the cited prior art, as will be discussed below in the section entitled, "Response to Arguments."

Election/Restrictions

2. Claim 11 is noted to contain nominal method steps. At this time restriction has not been required between the product claims 1-4, 6, and 8-10 and the method claim 11 because the method claim does not recite any significant manipulative steps and is therefore considered as part of the product claims. If the method claim is amended to contain significant method steps they will be subject to restriction based on original presentation.

Claim Rejections - 35 USC § 103

3. Claims 1-4, 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara et al. (EP0722933A1).

4. The limitations of claim 1 require a metal sheet with an anticorrosive coating formed from an anticorrosive paint on at least one side thereof, where the anticorrosive paint contains 55-85% by weight metallic zinc powder and 1-20.3% by weight of at least one kind of metal salt rust inhibitor, said metal salt being a salt of a metal which is more base than zinc.

5. With respect to these limitations Shinohara et al. (Shinohara) teaches a process for coating a steel plate with a corrosion inhibiting coating, wherein the corrosion inhibiting coating comprises a polymer binder, a zinc powder having an average particle

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size in the range of 1-15 μ , and a rust preventing pigment selected from zinc phosphate, aluminum phosphate, calcium phosphate, zinc molybdate or calcium molybdate (page 3, lines 50-59 and page 10, lines 38-40).

6. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to select either aluminum or calcium phosphate as the rust preventing pigment in Shinohara, as these materials are recognized to be equivalent to the other materials listed as suitable for this purpose.

7. The applicant is respectfully reminded that substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. *In Re Fount* 213 USPQ 532 (CCPA 1982); *In Re Siebentritt* 152 USPQ 618 (CCPA 1967); *Grover Tank & Mfg. Co. Inc V. Linde Air Products Co.* 85 USPQ 328 (USSC 1950).

8. The examiner takes the position that the requirement in claim 1 that the rust inhibitor be a salt of a metal that is more basic than Zinc is met when either aluminum or calcium phosphate is utilized, as these materials are specifically listed on page 4, paragraph 3 of the instant specification as meeting this requirement.

9. Regarding the amount of rust inhibitor and zinc powder, Shinohara teaches that the coating material suitably contains 15-70% by weight zinc powder and 0-20% by weight of rust inhibiting pigment (page 4, lines 3-6). As 70% by weight zinc powder and 20% by weight rust inhibiting pigment are completely encompassed within the applicant's required ranges, these limitations are met.

10. Regarding the limitations of claim 2, wherein the applicant requires the substrate to be a steel sheet, this limitation is met as set forth above for claim 1.

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11. Regarding the limitations of claim 3, wherein the applicant requires the coating film to have a thickness in the range of 5-30 μ . Shinohara teaches that the dry film thickness of the coating should preferably be between 10-30 μ (page 5, lines 44-47). Thus, this limitation is met.

12. Regarding claim 4, wherein the applicant requires the zinc powder to have an average particle diameter between 0.01-20 μ . As stated above for claim 1, Shinohara teaches that the powder has an average particle size between 1-15 μ . Thus this limitation is met.

13. Regarding claim 8, wherein the applicant requires the metal salt rust inhibitor to be a phosphate. This limitation is met as set forth above for claim 1 when calcium or aluminum phosphate is utilized as the rust preventing pigment.

14. Regarding the limitations of claim 11, wherein the applicant requires a generic method for making a metal sheet with an anticorrosive coating comprising the steps of coating an anticorrosive coating on a metal sheet and producing the metal sheet with the anticorrosive coating as defined in claim 1. These limitations are met as set forth above for claim 1, as the coated metal sheet of Shinohara necessarily would require the steps of "coating" the metal sheet with the composition according to claim 1, when an aluminum or calcium phosphate is utilized as the anticorrosive pigment.

15. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara as applied to claim 1 above, and further in view of Wasel-Nielen et al (US4294808).

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16. Shinohara does not teach the use of a metal salt rust inhibitor having an average particle diameter no larger than $1\mu\text{m}$.

17. However, Wasel-Nielen et al. (Wasel) teaches a method for making anticorrosive pigments such as calcium and aluminum phosphate such that greater than 90% of the pigment has a particle size in the range of $0.05\text{--}8\mu$ (column 4, lines 26-41 and column 6, example 6). Pigments having such a particle size directly are particularly suited for use as anticorrosive pigments (column 3, lines 45-50).

18. Therefore it would have been obvious to use the $0.05\text{--}8\mu$ Ca or Al phosphate particles taught by Wasel as the anticorrosive pigment utilized by Shinohara.

19. One would have been motivated to make such a modification due to the teaching in Wasel that Al or Ca pigments having this particle size are particularly suited for use as anticorrosive pigments.

20. Further, Wasel teaches that the particle size of an anticorrosive pigment impacts the anticorrosive efficiency of the pigment. Specifically, Wasel teaches that the particle size of an anticorrosive pigment is preferably small, so that the pigment can exhibit maximum surface area and coverage with a minimum amount of pigment utilized (column 1, lines 18-50 and column 4, lines 26-41).

21. Therefore it would have been obvious to one of ordinary skill in the art to optimize the particle size of the Ca and Al phosphate pigment taught by Wasel within the desired range so as to obtain an anticorrosive pigment exhibiting a maximum surface area with a minimum amount of material utilized.

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22. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara as applied to claim 1 above, and further in view of Mekishima et al. (US4040842).

23. Shinohara does not teach the use of a metal salt rust inhibitor that is a phosphomolybdate of a metal that is more basic than Zn, as required by claim 9.

24. However, Mekishima et al. (Mekishima) teaches various corrosion inhibiting pigments that are suitable for use in a corrosion prevention coating that also includes zinc powder and a resin binder. Suitable corrosion inhibiting pigments include zinc molybdate, calcium molybdate, magnesium phosphomolybdate, and barium phosphomolybdate.

25. Therefore it would have been obvious to one of ordinary skill in the art to utilize barium or magnesium phosphomolybdate as taught by Mekishima as the corrosion inhibiting pigment taught by Shinohara.

26. One would have made this modification in light of the fact that Ba and Mg phosphomolybdate are recognized to be equivalent to Zn molybdate as suitable materials for use as a corrosion inhibiting pigment in a corrosion resistant resin powder that additionally comprises a zinc powder.

27. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara as applied to claim 1 above, and further in view of Rivera (US6117251).

28. Shinohara does not teach a phosphate coating between the metal sheet and a corrosion inhibiting paint coating, as required by claim 10.

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29. However, Rivera teaches coating a steel sheet with a layer of Zinc Phosphate so as to minimize the corrosion of the sheet and to improve the adhesion of subsequently coated materials such as sealants and paints to the surface of the metal sheet (column 2, lines 34-42 and column 1, lines 5-20).

30. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a zinc phosphate coating as taught by Rivera between the surface of the steel sheet and the corrosion preventing coating utilized by Shinohara.

31. One would have been motivated to make this modification due to the teaching in Rivera that applying a layer of Zinc Phosphate to the surface of a steel sheet improves the adhesion of subsequent materials that are deposited on the sheet.

Response to Arguments

32. Applicant's arguments filed 7/14/03 have been fully considered but they are not persuasive. In the instant case, the applicants have argued that the instant invention provides unexpectedly higher anticorrosive properties than that of the cited prior art when a combination of 55-85 weight% zinc powder with 0-20.3 weight % anticorrosive pigment that is more basic than zinc powder is utilized in a coating composition on a metal sheet. The applicant cites page 10, table 1 of the instant specification as evidence to this fact. The examiner acknowledges that table 1 does indeed show that a coating containing zinc powder and a rust inhibitor that is more basic than Zn in the applicants required amounts provides improved corrosion resistance over coatings not meeting these requirements. However, this argument is unpersuasive in light of the fact that the

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cited prior art specifically teaches endpoints for these same two components which are completely encompassed within the applicants claimed ranges. Specifically, Shinohara states that the anticorrosive coating suitably contains 15-**70 weight %** Zn powder and 0-**20 weight %** pigment, wherein suitable pigments include 2 rust inhibiting pigments (Ca and Mg phosphate) that are mentioned as suitable rust inhibitors that are more basic than Zn. In response to applicant's argument that the anticorrosive properties of a composition having the applicants amount of Zn powder and rust inhibitor, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhler whose telephone number is 703-305-0179. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0389.

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August 4, 2003


Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700